

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF NORTH CAROLINA
WESTERN DIVISION

CIVIL ACTION FILE NO. 5:14-CV-489

EICES RESEARCH, INC.,)	
)	
Plaintiff,)	
)	
v.)	ORIGINAL COMPLAINT
)	FOR PATENT INFRINGEMENT
APPLE INC.,)	[Jury Trial Requested]
)	
Defendant.)	

This is an action for patent infringement in which Plaintiff EICES Research, Inc. makes the following allegations against Defendant Apple Inc. based on personal knowledge, the investigation of its counsel, and information and belief:

PARTIES

1. Plaintiff EICES Research, Inc. ("EICES") is a North Carolina corporation with its principal place of business at 101 Chalon Drive, Cary, North Carolina 27511.
2. Upon information and belief, Defendant Apple Inc. ("Apple") is a California corporation with its principal place of business at 1 Infinite Loop, Cupertino, California 95014. Apple can be served with process by serving CT Corporation System, Registered Agent, 818 W. 7th St., Los Angeles, California 90017.

JURISDICTION AND VENUE

3. This is a civil action for patent infringement arising under the patent laws of the United States, 35 U.S.C. § 101 *et seq.*, including 35 U.S.C. §§ 271 and 281-285. This Court has

exclusive subject matter jurisdiction over this case for patent infringement under 28 U.S.C. §§ 1331 and 1338.

4. Venue is proper in this Court pursuant to 28 U.S.C. §§ 1391 and 1400(b).

5. This Court has personal jurisdiction over Apple. Apple has conducted and does conduct business within the State of North Carolina. Apple, directly or through subsidiaries or intermediaries (including distributors, retailers, and others), ships, distributes, offers for sale, sells, and/or advertises (including through its web pages) its products (including infringing products) and/or services in the United States, the State of North Carolina, and the Eastern District of North Carolina. Apple, directly and through subsidiaries or intermediaries (including distributors, retailers, and others), has purposefully and voluntarily placed one or more infringing products and/or services, as described below, into the stream of commerce with the expectation that they will be purchased and used by consumers in the Eastern District of North Carolina. These infringing products and/or services have been and continue to be purchased and used by consumers in the Eastern District of North Carolina. Apple has committed acts of patent infringement within the State of North Carolina and, more particularly, within the Eastern District of North Carolina.

THE ASSERTED PATENTS

6. This lawsuit asserts causes of action for infringement of United States Patent Nos. 7,881,393; 8,199,837; 8,576,940; and 8,660,169 (collectively, the “Asserted Patents”).

7. On February 1, 2011, the U.S. Patent and Trademark Office duly and legally issued U.S. Patent No. 7,881,393 (“the ’393 Patent”) entitled, “WAVEFORMS COMPRISING A PLURALITY OF ELEMENTS AND TRANSMISSION THEREOF,” to Peter D. Karabinis.

EICES is the owner by assignment of the '393 Patent and holds all right, title and interest to the '393 Patent. A true and correct copy of the '393 Patent is attached as Exhibit A.

8. On June 12, 2012, the U.S. Patent and Trademark Office duly and legally issued U.S. Patent No. 8,199,837 ("the '837 Patent") entitled, "SYSTEMS/METHODS OF SEQUENTIAL MODULATION OF A SINGLE CARRIER FREQUENCY BY A PLURALITY OF ELEMENTS OF A WAVEFORM," to Peter D. Karabinis. EICES is the owner by assignment of the '837 Patent and holds all right, title and interest to the '837 Patent. A true and correct copy of the '837 Patent is attached as Exhibit B.

9. On November 5, 2013, the U.S. Patent and Trademark Office duly and legally issued U.S. Patent No. 8,576,940 ("the '940 Patent") entitled, "SYSTEMS/METHODS OF ADAPTIVELY VARYING A BANDWIDTH AND/OR FREQUENCY CONTENT OF COMMUNICATIONS" to Peter D. Karabinis. EICES is the owner by assignment of the '940 Patent and holds all right, title and interest to the '940 Patent. A true and correct copy of the '940 Patent is attached as Exhibit C.

10. On February 25, 2014, the U.S. Patent and Trademark Office duly and legally issued U.S. Patent No. 8,660,169 ("the '169 Patent") entitled, "SYSTEMS/METHODS OF ADAPTIVELY VARYING A BANDWIDTH AND/OR FREQUENCY CONTENT OF COMMUNICATIONS" to Peter D. Karabinis. EICES is the owner by assignment of the '169 Patent and holds all right, title and interest to the '169 Patent. A true and correct copy of the '169 Patent is attached as Exhibit D.

11. The Asserted Patents are valid and enforceable.

BACKGROUND

DR. KARABINIS' INVENTIONS

12. The inventions disclosed and claimed in the Asserted Patents were invented and patented by Dr. Peter D. Karabinis.

13. Dr. Karabinis holds a Ph.D. in electrical engineering and has worked in the field of wireless communications for thirty-five years for some of the largest companies in telecommunications, including Bell Telephone Laboratories, Raytheon Company, and Ericsson Inc.

14. Dr. Karabinis' innovative work in the wireless communications field has resulted in over 155 patents to date, including the Asserted Patents.

15. Dr. Karabinis formed EICES (Engineering Innovators Consultants Educators and Scientists) to develop innovations for the improvement of wireless communications. Dr. Karabinis is the Founder and Chief Technology Officer of EICES.

16. Dr. Karabinis and his family have resided in Cary, North Carolina for over twenty years.

3GPP LTE STANDARD

17. Long-Term Evolution ("LTE") is a wireless communication standard developed by the 3rd Generation Partnership Project ("3GPP") for high-speed data for mobile phones and data terminals (hereinafter referred to as the "3GPP LTE Standard"). It betters previous generations of the standard (GSM/UMTS) by increasing the capacity and speed of wireless data networks using new digital signaling processing techniques and modulations.

18. There are currently several releases of specifications for the 3GPP LTE Standard, including Release 8, Release 9, Release 10, and Release 11. Release 10 and beyond have been referred to as "LTE-Advanced."

19. Devices that support the 3GPP LTE Standard are commonly marketed as supporting 4G LTE connectivity.

20. LTE, including LTE-Advanced, with its capacity for high speed data, is becoming the basis for all future mobile systems.

21. Dr. Karabinis' inventions described in the Asserted Patents are implemented in the 3GPP LTE Standard. Among other benefits, the inventions disclosed and claimed in the Asserted Patents increase network capacity, data rates, and spectrum flexibility.

GENERAL ALLEGATIONS

22. Apple has directly and indirectly infringed and continues to directly and indirectly infringe the Asserted Patents by engaging in acts constituting infringement under 35 U.S.C. § 271(a) and (b), including, but not necessarily limited to, one or more of making, using, selling and offering to sell, in this District and elsewhere in the United States, and importing into this District and elsewhere in the United States, certain mobile communication devices that support 4G LTE connectivity ("Apple LTE Communication Devices").

23. On information and belief, Apple's iPhone 5, iPhone 5c, iPhone 5s, iPad Air, iPad mini, iPad mini with Retina display, iPad 3, and iPad 4 support 4G LTE connectivity.

24. On information and belief, Apple LTE Communication Devices include Apple's iPhone 5, iPhone 5c, iPhone 5s, iPad Air, iPad mini, iPad mini with Retina display, iPad 3, and iPad 4.

25. On information and belief, Apple LTE Communication Devices support at least Release 8, *et seq.* of the 3GPP LTE Standard.

26. Apple is doing business in the United States and, more particularly, in the Eastern District of North Carolina, by making, using, selling, importing, and/or offering for sale Apple LTE Communication Devices.

27. EICES has been damaged as a result of Apple's infringing conduct. Apple is therefore liable to EICES in an amount that adequately compensates EICES for Apple's infringement, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT I

APPLE INFRINGES THE '393 PATENT

28. EICES repeats and realleges the allegations in paragraphs 1-27 as though fully set forth herein.

29. Apple has directly infringed and continues to directly infringe the '393 Patent by making, using, testing, selling, offering for sale, or importing into the United States products and/or methods covered by one or more claims of the '393 Patent. Apple products that infringe one or more claims of the '393 Patent include, but are not limited to, Apple LTE Communication Devices.

30. Apple has induced and continues to induce infringement of the '393 Patent by intending that others use, offer for sale, or sell in the United States, products and/or methods covered by one or more claims of the '393 Patent, including, but not limited to, Apple LTE Communication Devices. Apple provides these products to others, such as customers, resellers and end-use consumers who, in turn, use, offer for sale, or sell in the United States these Apple LTE Communication Devices that infringe one or more claims of the '393 Patent.

31. Apple indirectly infringes the '393 Patent by inducing infringement by others, such as resellers, customers and end-use consumers, in accordance with 35 U.S.C. § 271(b) in this District and elsewhere in the United States. Direct infringement is a result of the activities performed by the resellers, customers and end-use consumers of the Apple LTE Communication Devices.

32. Apple received notice of the '393 Patent at least as of the date this lawsuit was filed.

33. Apple's affirmative acts of selling the Apple LTE Communication Devices, causing the Apple LTE Communication Devices to be manufactured and distributed, and providing instructions for using Apple LTE Communication Devices, induce Apple's resellers, customers and end-use consumers to use Apple LTE Communication Devices in their normal and customary way to infringe one or more claims of the '393 Patent. Apple performs the acts that constitute induced infringement, and induce actual infringement, with the knowledge of the '393 Patent and with the knowledge or willful blindness that the induced acts constitute infringement.

34. Apple specifically intends for others, such as resellers, customers and end-use consumers, to directly infringe one or more claims of the '393 Patent, or, alternatively, has been willfully blind to the possibility that its inducing acts would cause infringement. By way of example, and not as limitation, Apple induces such infringement by its affirmative action by, among other things: (a) providing advertising on the benefits of using the Apple LTE Communication Devices with LTE networks; (b) providing information regarding which carriers support LTE networks; (c) providing instruction on how to use the 4G LTE connectivity in

Apple's LTE Communication Devices; and (d) providing hardware and software components required by the claims of the '393 Patent.¹

35. Accordingly, a reasonable inference is that Apple specifically intends for others, such as resellers, customers and end-use consumers, to directly infringe one or more claims of the '393 Patent in the United States because Apple has knowledge of the '393 Patent at least as of the date this lawsuit was filed and Apple actually induces others, such as resellers, customers and end-use consumers, to directly infringe the '393 Patent by using, selling, and/or distributing, within the United States, Apple LTE Communication Devices.

36. As a result of Apple's acts of infringement, EICES has suffered and will continue to suffer damages in an amount to be proved at trial.

COUNT II

APPLE INFRINGES THE '837 PATENT

37. EICES repeats and realleges the allegations in paragraphs 1-36 as though fully set forth herein.

38. Apple has directly infringed and continues to directly infringe the '837 Patent by making, using, testing, selling, offering for sale, or importing into the United States products and/or methods covered by one or more claims of the '837 Patent. Apple products that infringe one or more claims of the '837 Patent include, but are not limited to, Apple LTE Communication Devices.

¹ See, e.g., <http://www.apple.com/iphone/LTE/>; <http://www.apple.com/ipad/LTE/>; <http://support.apple.com/kb/ht5205>; <http://www.apple.com/iphone-5s/specs/>; <http://www.apple.com/pr/library/2013/01/28Apple-Updates-iOS-to-6-1.html>; <http://www.apple.com/iphone/compare/>; <http://www.apple.com/ipad-air/ultrafast-wireless/>; <http://www.apple.com/pr/library/2012/09/12Apple-Introduces-iPhone-5.html>; <https://www.apple.com/pr/library/2012/03/14New-iPad-Arrives-in-the-US-Nine-Additional-Countries-on-Friday.html>; <http://www.apple.com/iphone-5s/features/>.

39. Apple has induced and continues to induce infringement of the '837 Patent by intending that others use, offer for sale, or sell in the United States, products and/or methods covered by one or more claims of the '837 Patent, including, but not limited to, Apple LTE Communication Devices. Apple provides these products to others, such as customers, resellers and end-use consumers who, in turn, use, offer for sale, or sell in the United States these Apple LTE Communication Devices that infringe one or more claims of the '837 Patent.

40. Apple indirectly infringes the '837 Patent by inducing infringement by others, such as resellers, customers and end-use consumers, in accordance with 35 U.S.C. § 271(b) in this District and elsewhere in the United States. Direct infringement is a result of the activities performed by the resellers, customers and end-use consumers of the Apple LTE Communication Devices.

41. Apple received notice of the '837 Patent at least as of the date this lawsuit was filed.

42. Apple's affirmative acts of selling the Apple LTE Communication Devices, causing the Apple LTE Communication Devices to be manufactured and distributed, and providing instructions for using Apple LTE Communication Devices, induce Apple's resellers, customers and end-use consumers to use Apple LTE Communication Devices in their normal and customary way to infringe one or more claims of the '837 Patent. Apple performs the acts that constitute induced infringement, and induce actual infringement, with the knowledge of the '837 Patent and with the knowledge or willful blindness that the induced acts constitute infringement.

43. Apple specifically intends for others, such as resellers, customers and end-use consumers, to directly infringe one or more claims of the '837 Patent, or, alternatively, has been

willfully blind to the possibility that its inducing acts would cause infringement. By way of example, and not as limitation, Apple induces such infringement by its affirmative action by, among other things: (a) providing advertising on the benefits of using the Apple LTE Communication Devices with LTE networks; (b) providing information regarding which carriers support LTE networks; (c) providing instruction on how to use the 4G LTE connectivity in Apple's LTE Communication Devices; and (d) providing hardware and software components required by the claims of the '837 Patent.²

44. Accordingly, a reasonable inference is that Apple specifically intends for others, such as resellers, customers and end-use consumers, to directly infringe one or more claims of the '837 Patent in the United States because Apple has knowledge of the '837 Patent at least as of the date this lawsuit was filed and Apple actually induces others, such as resellers, customers and end-use consumers, to directly infringe the '837 Patent by using, selling, and/or distributing, within the United States, Apple LTE Communication Devices.

45. As a result of Apple's acts of infringement, EICES has suffered and will continue to suffer damages in an amount to be proved at trial.

COUNT III

APPLE INFRINGES THE '940 PATENT

46. EICES repeats and realleges the allegations in paragraphs 1-45 as though fully set forth herein.

² See, e.g., <http://www.apple.com/iphone/LTE/>; <http://www.apple.com/ipad/LTE/>; <http://support.apple.com/kb/ht5205>; <http://www.apple.com/iphone-5s/specs/>; <http://www.apple.com/pr/library/2013/01/28Apple-Updates-iOS-to-6-1.html>; <http://www.apple.com/iphone/compare/>; <http://www.apple.com/ipad-air/ultrafast-wireless/>; <http://www.apple.com/pr/library/2012/09/12Apple-Introduces-iPhone-5.html>; <https://www.apple.com/pr/library/2012/03/14New-iPad-Arrives-in-the-US-Nine-Additional-Countries-on-Friday.html>; <http://www.apple.com/iphone-5s/features/>.

47. Apple has directly infringed and continues to directly infringe the '940 Patent by making, using, testing, selling, offering for sale, or importing into the United States products and/or methods covered by one or more claims of the '940 Patent. Apple products that infringe one or more claims of the '940 Patent include, but are not limited to, Apple LTE Communication Devices.

48. Apple has induced and continues to induce infringement of the '940 Patent by intending that others use, offer for sale, or sell in the United States, products and/or methods covered by one or more claims of the '940 Patent, including, but not limited to, Apple LTE Communication Devices. Apple provides these products to others, such as customers, resellers and end-use consumers who, in turn, use, offer for sale, or sell in the United States these Apple LTE Communication Devices that infringe one or more claims of the '940 Patent.

49. Apple indirectly infringes the '940 Patent by inducing infringement by others, such as resellers, customers and end-use consumers, in accordance with 35 U.S.C. § 271(b) in this District and elsewhere in the United States. Direct infringement is a result of the activities performed by the resellers, customers and end-use consumers of the Apple LTE Communication Devices.

50. Apple received notice of the '940 Patent at least as of the date this lawsuit was filed.

51. Apple's affirmative acts of selling the Apple LTE Communication Devices, causing the Apple LTE Communication Devices to be manufactured and distributed, and providing instructions for using Apple LTE Communication Devices, induce Apple's resellers, customers and end-use consumers to use Apple LTE Communication Devices in their normal and customary way to infringe one or more claims of the '940 Patent. Apple performs the acts

that constitute induced infringement, and induce actual infringement, with the knowledge of the '940 Patent and with the knowledge or willful blindness that the induced acts constitute infringement.

52. Apple specifically intends for others, such as resellers, customers and end-use consumers, to directly infringe one or more claims of the '940 Patent, or, alternatively, has been willfully blind to the possibility that its inducing acts would cause infringement. By way of example, and not as limitation, Apple induces such infringement by its affirmative action by, among other things: (a) providing advertising on the benefits of using the Apple LTE Communication Devices with LTE networks; (b) providing information regarding which carriers support LTE networks; (c) providing instruction on how to use the 4G LTE connectivity in Apple's LTE Communication Devices; and (d) providing hardware and software components required by the claims of the '940 Patent.³

53. Accordingly, a reasonable inference is that Apple specifically intends for others, such as resellers, customers and end-use consumers, to directly infringe one or more claims of the '940 Patent in the United States because Apple has knowledge of the '940 Patent at least as of the date this lawsuit was filed and Apple actually induces others, such as resellers, customers and end-use consumers, to directly infringe the '940 Patent by using, selling, and/or distributing, within the United States, Apple LTE Communication Devices.

³ See, e.g., <http://www.apple.com/iphone/LTE/>; <http://www.apple.com/ipad/LTE/>; <http://support.apple.com/kb/ht5205>; <http://www.apple.com/iphone-5s/specs/>; <http://www.apple.com/pr/library/2013/01/28Apple-Updates-iOS-to-6-1.html>; <http://www.apple.com/iphone/compare/>; <http://www.apple.com/ipad-air/ultrafast-wireless/>; <http://www.apple.com/pr/library/2012/09/12Apple-Introduces-iPhone-5.html>; <https://www.apple.com/pr/library/2012/03/14New-iPad-Arrives-in-the-US-Nine-Additional-Countries-on-Friday.html>; <http://www.apple.com/iphone-5s/features/>.

54. As a result of Apple's acts of infringement, EICES has suffered and will continue to suffer damages in an amount to be proved at trial.

COUNT IV

APPLE INFRINGES THE '169 PATENT

55. EICES repeats and realleges the allegations in paragraphs 1-54 as though fully set forth herein.

56. Apple has directly infringed and continues to directly infringe the '169 Patent by making, using, testing, selling, offering for sale, or importing into the United States products and/or methods covered by one or more claims of the '169 Patent. Apple products that infringe one or more claims of the '169 Patent include, but are not limited to, Apple LTE Communication Devices.

57. Apple has induced and continues to induce infringement of the '169 Patent by intending that others use, offer for sale, or sell in the United States, products and/or methods covered by one or more claims of the '169 Patent, including, but not limited to, Apple LTE Communication Devices. Apple provides these products to others, such as customers, resellers and end-use consumers who, in turn, use, offer for sale, or sell in the United States these Apple LTE Communication Devices that infringe one or more claims of the '169 Patent.

58. Apple indirectly infringes the '169 Patent by inducing infringement by others, such as resellers, customers and end-use consumers, in accordance with 35 U.S.C. § 271(b) in this District and elsewhere in the United States. Direct infringement is a result of the activities performed by the resellers, customers and end-use consumers of the Apple LTE Communication Devices.

59. Apple received notice of the '169 Patent at least as of the date this lawsuit was filed.

60. Apple's affirmative acts of selling the Apple LTE Communication Devices, causing the Apple LTE Communication Devices to be manufactured and distributed, and providing instructions for using Apple LTE Communication Devices, induce Apple's resellers, customers and end-use consumers to use Apple LTE Communication Devices in their normal and customary way to infringe one or more claims of the '169 Patent. Apple performs the acts that constitute induced infringement, and induce actual infringement, with the knowledge of the '169 Patent and with the knowledge or willful blindness that the induced acts constitute infringement.

61. Apple specifically intends for others, such as resellers, customers and end-use consumers, to directly infringe one or more claims of the '169 Patent, or, alternatively, has been willfully blind to the possibility that its inducing acts would cause infringement. By way of example, and not as limitation, Apple induces such infringement by its affirmative action by, among other things: (a) providing advertising on the benefits of using the Apple LTE Communication Devices with LTE networks; (b) providing information regarding which carriers support LTE networks; (c) providing instruction on how to use the 4G LTE connectivity in Apple's LTE Communication Devices; and (d) providing hardware and software components required by the claims of the '169 Patent.⁴

⁴ See, e.g., <http://www.apple.com/iphone/LTE/>; <http://www.apple.com/ipad/LTE/>; <http://support.apple.com/kb/ht5205>; <http://www.apple.com/iphone-5s/specs/>; <http://www.apple.com/pr/library/2013/01/28Apple-Updates-iOS-to-6-1.html>; <http://www.apple.com/iphone/compare/>; <http://www.apple.com/ipad-air/ultrafast-wireless/>; <http://www.apple.com/pr/library/2012/09/12Apple-Introduces-iPhone-5.html>; <https://www.apple.com/pr/library/2012/03/14New-iPad-Arrives-in-the-US-Nine-Additional-Countries-on-Friday.html>; <http://www.apple.com/iphone-5s/features/>.

62. Accordingly, a reasonable inference is that Apple specifically intends for others, such as resellers, customers and end-use consumers, to directly infringe one or more claims of the '169 Patent in the United States because Apple has knowledge of the '169 Patent at least as of the date this lawsuit was filed and Apple actually induces others, such as resellers, customers and end-use consumers, to directly infringe the '169 Patent by using, selling, and/or distributing, within the United States, Apple LTE Communication Devices.

63. As a result of Apple's acts of infringement, EICES has suffered and will continue to suffer damages in an amount to be proved at trial.

PRAYER FOR RELIEF

WHEREFORE, EICES respectfully requests that this Court enter judgment in its favor and grant the following relief:

A. a judgment that Apple directly and/or indirectly infringes one or more claims of each of the Asserted Patents;

B. award EICES damages in an amount adequate to compensate EICES for Apple's infringing products' infringement of the claims of the Asserted Patents, but in no event less than a reasonable royalty, and supplemental damages for any continuing post-verdict infringement until entry of the final judgment with an accounting as needed, under 35 U.S.C. § 284;

C. award EICES pre-judgment interest and post-judgment interest on the damages awarded, including pre-judgment interest, pursuant to 35 U.S.C. § 284, from the date of each act of infringement of the Asserted Patents by Apple to the day a damages judgment is entered, and an award of post-judgment interest, pursuant to 28 U.S.C. § 1961, continuing until such judgment is paid, at the maximum rate allowed by law;

D. a judgment and order finding this to be an exceptional case and requiring Apple to pay the costs of this action (including all disbursements) and attorneys' fees, pursuant to 35 U.S.C. § 285;

E. order an accounting for damages;

F. award a compulsory future royalty for the Asserted Patents; and

G. award such further relief as the Courts deems just and proper.

DEMAND FOR JURY TRIAL

EICES hereby demands a jury trial for all issues so triable.

This is the 29th day of August, 2014.

/s/ John B. Campbell

John B. Campbell

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